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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,600	12/12/2003	Larry W. Gatlin	03015/01UTL	1613

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EXAMINER

SUCHFIELD, GEORGE A

ART UNIT PAPER NUMBER

3676

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,600

Applicant(s)

GATLIN ET AL.

Examiner

George Suchfield

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 1-19 and 45-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/15/05</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19 and 45-47, drawn to a composition and methods of preparing, classified in class 507, subclass 239.
 - II. Claims 20-44, drawn to a method of treating a well to remove noxious sulfur species from a fluid(s), classified in class 166, subclass 310.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the composition of, or prepared by, the Group I invention could be used for treating fluids other than in a well or well bore environment and/or possesses utility in applications other than the removal of noxious sulfur species, e.g., as a corrosion inhibitor or additive in a cleaning formulation.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Robert W. Strozier on January 13, 2006 a provisional election was made without traverse to prosecute the invention of Group II, claims 20-

44. Affirmation of this election must be made by applicant in replying to this Office action.

Claims 1-19 and 45-47 stand withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

7. The disclosure is objected to because of the following:

The chemical formula recited in pages 2, 3 and 5, such as that presented in Para [0007] for the sulfur scavenging composition or compound appears to be erroneous. More specifically, on the left side of the formula, the subscripts “k” and “m” presently appearing by the H atom appear to be misplaced. In this regard, it does not appear correct that the number of H atoms can be arbitrarily changed, insofar as such number is normally dictated by the valence of the adjacent atom or molecule. Moreover, the left side of the formula fails to correspond to the right side, which would appear to be required, overall, in order to comprise a “diamine terminated” amine-aldehyde adduct, as intended. It appears, instead, that the said subscripts should modify or appear by the “(R”N – R’HC)” group(s) in the left side of the formula. Appropriate correction is required.

It is further noted with respect to the recited formula that the presence of an oxygen atom or species is optional, i.e., “can be oxygen”. However, since the resulting formula is formed, in part, upon reaction of an amine with an aldehyde, it would appear an oxygen atom/species must

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be present. Thus, further correction and/or clarification is required (e.g., a condensation reaction occurs?) .

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 20-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 is deemed to be technically inaccurate with respect to the illustrated chemical formula, for the reasons set forth above in Para 7), and accordingly, the claim is deemed indefinite.

Claims 21-26 are similarly indefinite insofar as they depend from claim 20.

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 20-22, 26-29, 33 and 40-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Gatlin (5,498,707).

Gatlin discloses the treatment or contact of fluid streams with an exemplary amine-based sulfide or “noxious sulfur species” scavenger composition. While Gatlin does not explicitly call his sulfur scavenger a bimolecular amine-aldehyde “adduct” or set forth the formula of claim 20, it is deemed that the sulfur scavenging agent or composition in comprising, in one embodiment, the reaction product of a diamine with the previous reaction product of a primary amine, such as an alkanol amine, with an aldehyde, will necessarily or inherently resemble the recited formula and/or comprise a bimolecular amine-aldehyde “adduct”, as called for in independent claims 20, 27 and 40. More specifically, the final reaction product of the diamine with the primary amine-aldehyde intermediate product would appear to necessarily comprise or yield a “diamine terminated” bimolecular amine-aldehyde “adduct”, as described in applicant’s disclosure. It is further deemed since the reacting diamines are “sterically hindered”, as set forth in Gatlin (col. 2, lines 40-47), the formation of an “adduct” or inclusion complex as the final reaction product or “liquid resin” would appear to occur.

The process of Gatlin is deemed to encompass the step or limitation of claims 21, 28 and 41 insofar as Gatlin does disclose any aldehyde liberation occurring throughout the process.

The process of Gatlin further includes a solvent with or comprising the sulfide scavenger/converter composition, as called for in claims 22, 29 and 42.

As per claims 26 and 33, note that Gatlin (note col. 4, lines 48-50) makes numerous references to the use or inclusion of “amine heads”.

As per claims 43 and 44, it is noted that Gatlin, in large measure, is directed to the treatment or purification of “gaseous and liquid hydrocarbon streams” (col. 3, lines 24-33) wherever they occur, such as “lines”, etc.. Thus it is deemed, overall, that the process of Gatlin

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inherently or necessarily encompasses treatment in the recited conventional equipment associated with handling such “gaseous and liquid hydrocarbon streams”, such as oil/gas field equipment, flowline(s) and/or refinery.

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 24, 25 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gatlin (5,498,707).

As per claims 24, 25, 31 and 32, in carrying out the process of Gatlin, it would have been an obvious matter of choice or expedient to further monitor the concentration of sulfur species, and tailor the scavenger composition concentration accordingly, in order to render the overall fluid treatment process more cost effective and economically feasible.

As per claim 30, it is noted that Gatlin (col. 6, line 64 - col. 7, line 7) discusses different injection options or schemes, such as multiple injection points, in order to “enhance dispersion and maximize conversion of the sulfides”. In this regard, it is deemed that “atomizing”, e.g., using a nozzle, is a well known and exemplary manner of injection or dispersion. Accordingly, it would have been an obvious matter of choice or design to one of ordinary skill in the art to which the invention pertains, to atomize or deploy an atomizing means for injecting the sulfide scavenger into the sulfide-bearing fluid(s) in order to enhance the contact and scavenging of the sulfides.

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14. Claims 23 and 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gatlin (5,498,707) as applied to claim 20 above, and further in view of Walhaug et al (4,625,803).

Gatlin does not disclose the treatment of a well and/or well fluids, per se, however Gatlin, as noted above, discloses the treatment and removal of sulfide species from aqueous fluids of “gaseous and liquid hydrocarbon streams” (col. 3, lines 24-33). Walhaug et al discloses an exemplary system and method for injection of treatment chemicals to modify or treat producing hydrocarbon fluids in a well utilizing a coiled tubing string (note Figure 2).

Accordingly, it would have been obvious to one of ordinary skill in the art to which the invention pertains, to apply the exemplary sulfide scavenger composition set forth in the method of Gatlin for the removal of sulfide or other noxious sulfur species from a producing gaseous or liquid hydrocarbon stream in a well by injecting such scavenger composition into a well through a coiled tubing, as taught by Walhaug et al, as called for in claim 23, as well as independent claim 34, in order to remove sulfide or sulfur species from the production hydrocarbon fluids, thus rendering the production effluent more suitable for downstream treatment or refining.

The process of Gatlin, as modified by Walhaug et al, is deemed to encompass the step or limitation of claim 35, insofar as Gatlin does disclose any aldehyde liberation occurring throughout the process.

The process of Gatlin further includes a solvent with or comprising the sulfide scavenger/converter composition, as called for in claim 36.

As per claims 38 and 39, in carrying out the modified process of Gatlin, it would have been an obvious matter of choice or expedient to further monitor the concentration of sulfur

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species, and tailor the scavenger composition concentration accordingly, in order to render the overall fluid treatment process more cost effective and economically feasible.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Other references disclose processes for removing sulfides or noxious sulfur species from fluid streams and/or process for injecting treatment fluids or agents into production or injection fluids located in a well.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


George Suchfield
Primary Examiner
Art Unit 3676

Gs
January 21, 2006